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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/663,151	09/15/2000	Bradley J. Swearingen	1302-1001	2668

32376 7590 07/02/2007  
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EXAMINER
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SUBRAMANIAN, NARAYANSWAMY

ART UNIT	PAPER NUMBER
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3692

MAIL DATE	DELIVERY MODE
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07/02/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

**Application No.**

09/663,151

**Applicant(s)**

SWEARINGEN ET AL.

**Examiner**

Narayanswamy Subramanian

**Art Unit**

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 05 April 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 67-114 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 67-114 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

1. This office action is in response to applicant's communication of April 5, 2007.

Amendments to claims 67-82 have been entered. Claims 67-114 are pending and have been examined. The rejections and response to arguments are stated below.

#### *Claim Rejections - 35 USC § 101*

2. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

3. Claims 67-114 are rejected under 35 U.S.C. § 101 because the claimed invention is directed to non-statutory Subject matter.

35 USC 101 requires that in order to be patentable the invention must be a "new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof" (emphasis added).

Claims 67-114 are drawn to "a computer program embodied on a computer medium, a system and a method for enabling a trade in a user selected user preferred security, the method comprising: identifying user preferred securities from a plurality of securities based upon at least two user specific criteria including at least one criterion related to pricing; generating a graph in which each of the user preferred securities is represented and graphically differentiated from each of the other user preferred securities based upon the values of at least three user specific parameters associated with each of the user preferred securities; receiving a user selection of one of the user preferred securities represented on the graph; associating order parameters with the user selected user preferred security; and sending an order to execute a trade in, the user selected user preferred security according to the order parameters". The limitation "to execute a trade in,

the user selected user preferred security” is interpreted as an intended use of the sending step. Sending an order is not the same as executing a trade. As such the claimed invention is directed to a judicial exception to 35 U.S.C. 101 (i.e., an abstract idea, natural phenomenon, or law of nature) and is not directed to a practical application of such judicial exception because the claims do not require any physical transformation and the invention as claimed does not produce a useful, concrete, and tangible result.

The Court of Appeals for the Federal Circuit issued opinions in *State Street Bank & Trust Co. v. Signature Financial Group Inc.*, 149 F. 3d 1368, 47 USPQ2d 1596 (Fed. Cir. 1998) and *AT&T Corp. v. Excel Communications, Inc.*, 172 F.3d 1352, 50 USPQ2d 1447 (Fed. Cir. 1999). These decisions explained that, to be eligible for patent protection, the claimed invention as a whole must accomplish a practical application. That is, it must produce a “useful, concrete and tangible result.” *State Street*, 149 F.3d at 1373-74, 47 USPQ2d at 1601 02. To satisfy section 101 requirements, the claim must be for a practical application of the § 101 judicial exception, which can be identified in various ways: (a) The claimed invention “transforms” an article or physical object to a different state or thing. (b) The claimed invention otherwise produces a useful, concrete and tangible result, based on the factors discussed below.

The USPTO’s official interpretation of the utility requirement provides that the utility of an invention has to be (i) specific, (ii) substantial and (iii) credible. See MPEP § 2107. The claimed invention does not seem to meet this requirement.

The tangible requirement does require that the claim must recite more than a § 101 judicial exception, in that the process claim must set forth a practical application of that § 101 judicial exception to produce a real-world result. Benson, 409 U.S. at 71-72, 175 USPQ at 676-

77. Sending an order to execute a trade does not produce a real-world result, because there is no assurance that the trade takes place. To execute a trade in, the user selected user preferred security according to the order parameters is interpreted as an intended use of the sending step.

For an invention to produce a “concrete” result, the process must have a result that can be substantially repeatable or the process must substantially produce the same result again. In re Swartz, 232 F.3d 862, 864, 56 USPQ2d 1703, 1704 (Fed. Cir. 2000) (where asserted result produced by the claimed invention is “irreproducible” claim should be rejected under section 101). The opposite of “concrete” is unrepeatable or unpredictable. Since the invention involves a user selection of one of the user preferred securities different results will be produced depending on which securities are selected.

There is no useful, concrete and tangible result produced from implementing the steps of the claimed invention. The dependent claims are rejected for the same reason and by way of dependency on a rejected independent claim.

**The claims 99-114 recite a non-statutory process.**

The instant claims recite mathematical algorithm which involves a method identifying user preferred securities from a plurality of securities based upon at least two user specific criteria, generating a graph, receiving a user selection of one of the user preferred securities represented on the graph; associating order parameters with the user selected user preferred security; and sending an order according to the order parameters (as recited in claims 99-114). The limitation “to execute a trade in, the user selected user preferred security” is interpreted as an intended use of the sending step. A mathematical algorithm is defined as a "procedure for solving a given type of mathematical problem." *Gottschalk v. Benson*, 409 U.S. 63, 65, 175

USPQ 673, 674 (1972); *Flook*, 437 U.S. at 585 n.1. 198 USPQ at 195 n.1: *Diehr*, 450 U.S. at 186, 209 USPQ at 8. **Mathematical algorithms are non- statutory because they have been determined not to fall within the § 101 statutory class of a "process."** *Benson*. "[A]n algorithm, or mathematical formula, is like a law of nature, which cannot be the subject of a patent." *Diehr*, 450 U.S. at 186, 209 USPQ at 8. The exception applies only to mathematical algorithms since any process is an " algorithm" in the sense that it is a step-by-step procedure to arrive at a given result. *In re Walter*, 618 F.2d 758, 764 n.4, 205 USPQ 397, 405 n.4, (CCPA 1980); *Pardo*, 684 F.2d at 915, 214 USPQ at 676.

A mathematical algorithm is not made statutory by "attempting to limit the use of the formula to a particular technological environment." *Diehr*, 450 U.S. at 191, 209 USPQ at 10. Thus, "field of use" or "end use" limitations in the claim preamble are insufficient to constitute a statutory process. This is consistent with the usual treatment of preambles as merely setting forth the environment. See *Flook* (the preamble while limiting the application of the claimed method to "a process comprising the catalytic chemical conversion of hydrocarbons" did not serve to render the method statutory); *Walter*, 618 F.2d at 769, 205 USPQ at 409 ("Although the claim preambles relate the claimed invention to the art of seismic prospecting, the claims themselves are not drawn to methods of or apparatus for seismic prospecting"); *de Castelet*, 562 F.2d at 1244 n.6. 195 USPQ at 446 n.6 ("The potential for misconstruction of preamble language requires that compelling reason exist before that language may be given weight"). Compare *Waldbaum*, 559 F.2d at 616 n.6. 194 USPQ 469 n.6 (portion of preambles referred to in method portion of claims "are necessary for completeness of the claims and are proper limitations thereto").

Data-gathering steps

If the only limitations in the claims in addition to the mathematical algorithm are data-gathering steps which "merely determine values for the variables used in the mathematical formulae used in making the calculations." Such antecedent steps are insufficient to change a nonstatutory method of calculation into a statutory process. See *In re Richman*, 563 F.2d at 1030. 195 USPQ at 343; *Sarkar*, 588 F.2d at 1335. 200 USPQ at 139 ("If the steps of gathering and substituting values were alone sufficient, every mathematical equation, formula, or algorithm having any practical use would be per se subject to patenting as a 'process' under §101"): *Gelnovatch*, 595 F.2d at 41 n.7. 201 USPQ at 145 n.7 ("claimed step of perturbing the values of a set of process inputs (step 3), in addition to being a mathematical operation, appears to be a data-gathering step").

The claimed inventions recite data gathering step (identifying user preferred securities from a plurality of securities based upon at least two user specific criteria, generating a graph, receiving a user selection of one of the user preferred securities represented on the graph, associating order parameters with the user selected user preferred security and sending an order according to the order parameters). When viewed in light of the specification, this step constitutes data gathering. As per the court rulings cited above, the claims constitute mathematical algorithm(s) applied to data gathered in the respective process steps. The fact that a mathematical algorithm is applied to solve a problem of concealing information does not make the claim statutory. *Walter*, 618 F.2d at 764-65 n.4, 205 USPQ at 405 n.4. "The type of mathematical computation involved does not determine whether a procedure is statutory or

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nonstatutory." *In re Gelnovatch*, 595 F.2d 32, 41.201 USPQ 136, 145 (CCPA 1979). A "claim for an improved method of calculation, even when tied to a specific end use, is unpatentable subject matter under §101." *Flook*, 437 U.S. at 595 n.18, 198 USPQ at 199 n.18. Mathematical algorithms may represent scientific principles, laws of nature, or ideas or mental processes for solving complex problems. See *Meyer*, 688 F.2d at 794-95, 215 USPQ at 197.

The apparatus claims (claims 83-98) and computer readable storage medium claims (claims 67-82) are analyzed based upon the underlying process. In the instant case this claim recites process of the respective method claims. Since the underlying process is not statutory, a computer readable storage medium that stores instructions for performing the underlying process does become statutory. Labels are not determinative § 101 inquiries. "Benson applies equally whether an invention is claimed as an apparatus or process, because the form of the claim is often an exercise in drafting." *In re Johnson*, 589 F.2d 1070, 1077, 200 USPQ 199, 206 ([CCPA] 1978). "Though a claim expressed in 'means for (functional) terms [under 35 U.S.C. § 112, sixth paragraph] is said to be an apparatus claim, the subject matter as a whole of that claim may be indistinguishable from that of a method claim drawn to the steps performed by the 'means,'" *In re Freeman*, 573 F.2d at 1247, 197 USPQ at 472. Moreover, that the claimed computing system may be a "machine" within "the ordinary sense of the word," as appellant argues, is irrelevant. The holding in Benson "forecloses a purely literal reading of § 101." This analytical reasoning applies to a computer readable storage medium also. Dependent claims are rejected for the same reason and by way of dependency on a rejected independent claim.

Also claims 83-98 of the disclosed invention is inoperative and therefore lacks utility.



Claims 83-98 merely recite elements of an apparatus or a system (“means for” corresponds to software program elements and not tangible hardware components) without showing any ability to realize functionality of the recited elements (i.e. functional descriptive material per se) and therefore is rendered inoperative lacking any utility.

Note that a computer (or software program) code cannot by itself perform the underlying function until it is loaded on some computer readable memory and accessed by the computer (or a processor).

Functional descriptive material, per se, is not statutory. This is exemplified in *In re Warmerdam* 31 USPQ2d 1754 where the rejection of a claim to a disembodied data structure was affirmed. Thus a claim to a data structure, per se, or other functional descriptive material, including computer programs, per se, is not patent eligible subject matter.

#### ***Response to Arguments***

4. In response to Applicant’s arguments “The very language of the statute makes it clear that the Examiner’s rejections of system (i.e., apparatus) claims 83-98 and method (i.e., process) claims 99-114 are completely improper on their face”, the examiner respectfully disagrees. As discussed above in detail, the words “method” or “apparatus” in the preamble of claims do not make the claimed invention statutory.

Applicant's other arguments with respect to pending claims have been considered but are not persuasive.

*Conclusion*

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure are listed in the enclosed form PTO-892.
6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Narayanswamy Subramanian whose telephone number is (571) 272-6751. The examiner can normally be reached Monday-Thursday from 8:30 AM to 7:00 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Kramer can be reached at (571) 272-6783. The fax number for Formal or Official faxes and Draft to the Patent Office is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PMR or Public PAIR. Status information for unpublished

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applications is available through Private PMR only. For more information about the PMR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read "N. Sub", with a long horizontal stroke extending to the right.

Dr. N. Subramanian  
Primary Examiner  
Art Unit 3692

June 20, 2007